

REMARKS

To address the objection to duplicate claims, the applicants have canceled claims 20-22 and 40-43.

Claims 1-5, 8-10, 13, 14, 17-31, 33-36, 38 and 40-43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rosen et al. (U.S. Patent Application Publication Number 20030008657, hereinafter "Rosen") in view of Drucker (U.S. Patent Number 5,511,110), claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rosen in view of Drucker and Cheng et al. (U.S. Patent Number 6,353,602, hereinafter "Cheng"), and claims 7, 11, 15, 16, 32 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rosen in view of Drucker and Diaz et al. (U.S. Patent Number 5,442,809, hereinafter "Diaz"). Respectfully disagreeing with these rejections, reconsideration is requested by the applicant(s).

Regarding the rejection of claims 1 and 30, the Examiner cites Rosen [0007, 0012, 0032, 0070, 0087 and 0089], which read as follows (emphasis added):

[0007] Existing group communication infrastructures provide limited opportunities for significantly reducing the PTT latency, i.e., actual PTT latency may not be possibly reduced below the time required to re- establish traffic channels within dormant packet-data sessions. Further, talker and listeners traffic channels are brought up in series, because the only mechanism available to begin waking up a dormant group is to wait for the talker's traffic channel to be re-established to signal the server. Currently, no mechanism exists to send mobile-originated user signaling data on anything other than a traffic channel--a limitation that requires traffic channels to be re-established before any communication between clients and the server can take place.

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[0012] In one aspect, an apparatus for avoiding simultaneous service origination and paging in a mobile operating in a group communication network includes a receiver, a transmitter, and a processor communicatively coupled with the receiver and the transmitter. The processor is capable of receiving a floor-control request, e.g., in SDB form, from a source communication device **for initiating a group call, initiating a service origination process** for the source communication device, and transmitting a response to the floor-control request from a controller **after the service origination process is complete**.

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[0032] In one embodiment, the means for requesting the transmission privilege from a CM comprises a push-to-talk (PTT) key or switch. When a user in the NBS 100 desires to transmit information to other net members, the user may depress the push-to-talk switch located on his or her CD, **sending a floor-control request to obtain the transmission privilege** from CM 110. If no other net member is currently assigned the transmission privilege, the requesting user may be granted the transmission privilege and the user may be notified by an audible, visual, or tactile alert through the CD. After the requesting user has been granted the transmission privilege, information may then be transmitted from that user to the other net member.

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[0070] In one embodiment, the infrastructure may send the wakeup trigger 412 **to a target listener** over some available common forward channels, such as forward paging channel and forward common control channel, while the **target listeners'** traffic channels are not re- established yet. In one embodiment, the infrastructure may send the wakeup trigger 412 to the **target listener** in SDB form, regardless of what channel is used. If the **PTT floor-control request is sent** on the talker's reverse common channel as a SDB message and the target group's dormancy response timer is set to zero at the CM, actual PTT latency at the talker client may be reduced to the time required to send an SDB request message on the reverse link followed by a SDB response message on the forward link.

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[0087] In one embodiment, the CM may buffer the talker's first talk spurt. **After a user has pressed his PTT button** and the user's traffic channels are re-established, he may be allowed to communicate with the CM. At this time, since the listener traffic channels are not yet up, the CM buffers the talker's speech for future transmission to the target listeners. CM buffering may reduce the apparent PTT latency that the talker sees to the approximate time it takes to bring up the talker's traffic channel. FIG. 5 shows CM buffering according to one embodiment.

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[0089] In one embodiment, where a shorter apparent latency is desired, the talker may be allowed to begin speaking before even his traffic channel is re-established. **Because the client MS is not yet in communication with the CM, the signal to the talker to begin talking is made by the client MS. If the talker is allowed to speak before the talker's traffic channel is re- established,** the client MS may buffer the speech. Because communication with the CM has not yet been established, permission to talk is being given "optimistically." FIG. 6 shows client- side buffering according to one embodiment. In one embodiment, both CM buffering and client-side buffering may operate concurrently. Client-side buffering may allow the apparent PTT latency to be small.

In contrast, independent claim 1 recites (emphasis added) "**anticipating** by a radio access network (RAN) that an MS is **likely to be a target of communication not yet initiated**; performing at least one of: when a loading level of a serving cell of the MS is below an assignment threshold, **assigning a traffic channel to the MS** to avoid paging-related delays for the MS should the MS become a target of communication

and...” Independent claim 30 recites (emphasis added) “adapted to **anticipate** that a mobile station (MS) is **likely to be a target of communication not yet initiated**, adapted to perform at least one of adapted, when a loading level of a serving cell of the MS is below an assignment threshold, to **assign a traffic channel to the MS** to avoid paging-related delays for the MS should the MS become a target of communication and...”

The applicants submit that Rosen, as cited, does not teach or suggest assigning a traffic channel to an MS that is likely to be a target of communication that has not yet been initiated. The applicants submit that the Rosen passages cited all pertain to communication sessions that have already been initiated. Thus, the talker and the target / listening devices have been or are being determined as a result of a request to initiate a session. The applicants fail to see where Rosen teaches or suggests anticipating that an MS is likely to be a target of communication that has not yet been initiated and then assigning a traffic channel to that MS. In addition, the applicants also fail to see where Rosen teaches or suggests assigning the traffic channel based on whether a loading level of the serving cell is below an assignment threshold.

Regarding the rejection of claims 1 and 30, the Examiner also cites Drucker column 4 lines 1-22 and lines 44-67, which read as follows (emphasis added):

SUMMARY OF THE INVENTION

In accordance with this invention, a method and apparatus for improving the power conservation of cellular mobile units while decreasing mobile unit paging delay is disclosed. The method includes partitioning the forward control channel into time frames. Each frame includes paging slots that will be monitored by a set of assigned mobile units. Following initial frame synchronization; a mobile unit is in ON mode monitoring the forward control channel when its assigned slot is broadcast. If a page directed to the mobile unit appears in the unit's assigned slot, the mobile unit remains in ON mode and continues with call processing. However, if the mobile unit's assigned slot contains a page to a different mobile unit, in accordance with the present invention, the mobile unit will continue monitoring the slots sequentially following its assigned slot until either an empty slot is detected or a page to the mobile unit is received. If an empty slot is detected, the mobile unit switches to OFF mode since it did not receive a page. In this manner, multiple pages to distinct mobile units assigned to the same paging slot can be sent in a single frame or in sequential frames, thereby precluding multiple frame page delays.

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As noted, power consumption is a major consideration in the operation of some mobile

units in a cellular phone network. Thus, **one primary goal of the present invention is to conserve battery consumption by a mobile unit operating in a cellular phone network in idle mode without imposing undue delay in page processing.** The prior art conserved power by using a frame oriented scheme to transmit pages. This method allowed idle mobile units to be in an OFF mode during a specified period, thus conserving power. **However, one difficulty with the prior art is that call processing delays result. The present invention provides a system that reduces paging frame delays when more than one page assigned to a single paging slot is to be sent in a given frame.** The paging system of the present invention transmits pages for mobile units, which are assigned to the same paging slot, sequentially within a frame beginning with the assigned paging slot. In conjunction, each mobile unit is controlled to remain in an ON mode beginning with its assigned paging slot until a page for that mobile unit or an empty paging slot is recognized. Thus, if no page is recognized when the mobile unit is on, it is switched to an OFF mode to conserve energy during the remainder of the frame period. The system of the present invention can be implemented by modifying the control hardware and/or software at an MTSO, a set of base stations and a mobile unit within a cellular system.

In contrast, independent claims 1 and 30 each recite (emphasis added) **“signaling the MS to transition to at least one operational mode in which paging-related delays for the MS are reduced.”**

The applicants submit that Drucker, as cited, does not teach or suggest signaling the MS to transition to at least one operational mode in which paging-related delays for the MS are reduced. The applicants submit that the Drucker passages cited describe the reduction of paging delays as being with respect to prior art techniques. The applicants submit that Drucker, as cited, does not teach signaling an MS to transition operating modes in order to reduce paging-related delays. Rather, it is the entire approach of Drucker that “provides a system that reduces paging frame delays when more than one page assigned to a single paging slot is to be sent in a given frame.” Drucker column 4 lines 54-56.

Regarding the rejection of claims 2, 17 and 18, the Examiner cites Rosen [0007] (quoted above). However, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of these claims.

Regarding the rejection of claim 3, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 4, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 5, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 6, the applicants fail to see how Rosen and Drucker in view Cheng, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 8, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 9, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 10, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 13, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 14, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 16, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 23, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 24, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 25, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 27, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 28, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 31, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 33, the applicants fail to see how Rosen and Drucker, as cited, teach or suggest all the limitations of this claim.

Regarding the rejection of claim 38, the applicants fail to see how Rosen and

Since none of the references cited, either independently or in combination, teach all of the limitations of independent claims 1 or 30, or therefore, all the limitations of their respective dependent claims, it is asserted that neither anticipation nor a prima facie case for obviousness has been shown. No remaining grounds for rejection or objection being given, the claims in their present form are asserted to be patentable over the prior art of record and in condition for allowance. Therefore, allowance and issuance of this case is earnestly solicited.

Respectfully submitted,
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